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APPLICATION NO.	FILING DATE	FIRST NAME OF INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/434,318	11/04/1999	Ien-Ren Chen	45688-00002	3814

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EXAMINER

DOAN, THERESA T

ART UNIT PAPER NUMBER

2814

DATE MAILED: 11/18/2002

Please find below and or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/434,318

Applicant(s)

CHIEN ET AL.

Examiner

Theresa T Doan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on 22 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☐ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- 1 ☐ Certified copies of the priority documents have been received.
- 2 ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
- 3 ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

### Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 18) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 6, 8-10 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatano et al. (5,998,810) as previously cited.

With respect to claims 1 and 6, Hatano et al. disclose in figure 14 and text related a semiconductor light-emitting device, comprising:

a transparent substrate 701;

a semiconductor stacked structure arranged over a main surface of the transparent substrate 701 wherein the stacked structure comprises an n-type GaN-based III-V Group compound semiconductor layer 704 adjacent to the main surface and a p-type GaN-based III-V Group compound semiconductor layer 713 adjacent to the n-type semiconductor layer;

a first electrode 721 being in electrical contact with the n-type semiconductor layer; and

a second electrode 722 being in electrical contact with the p-type semiconductor layer 713.

Hanato et al. do not teach that the second electrode has good reflectivity of light.

The text of Hanato et al. in column 27, lines 41-44 teach the electrode material can be made of Al, Ag, Ni, e.g. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to recognize that the second electrode of Hanato has good reflectivity of light, because as is well known, Ag or Al are the metals that having characteristic of light reflecting and since, the same the electrode material metal as claimed (Ag, Al), the function should be the same. Therefore, Hanato et al. teach the second electrode has good reflectivity of light.

With respect to claims 8 and 13, Hatano et al. disclose in figure 4 and text related a semiconductor light-emitting device, comprising:

- a transparent substrate 41;

- a semiconductor stacked structure arranged over a main surface of the transparent substrate wherein the stacked structure comprises an p-type GaN-based III-V Group compound semiconductor layer 43 adjacent to the main surface and a n-type GaN-based III-V Group compound semiconductor layer 47 adjacent to the p-type semiconductor layer;

- a first electrode 49 being in electrical contact with the n-type semiconductor layer; and

- a second electrode 49 being in electrical contact with the p-type semiconductor layer.

Hanato et al. do not teach that the second electrode has good reflectivity of light.

The text of Hanato et al. in column 27, lines 41-44 teach the electrode material can be made of Al, Ag, Ni, e.g. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to recognize that the second electrode of Hanato has good reflectivity of light, because the same the electrode material metal (Ag, Al) the function should be the same. Therefore, Hanato et al. teach the second electrode has good reflectivity of light.

With respect to claims 2 and 9, Hatano et al. teach in figure 14 the stacked structure further comprises an active layer 707 placed between the n-type semiconductor layer and the p-type semiconductor layer.

With respect to claims 3 and 10, Hanato et al. teach in figure 14 an insulating layer at least coated on the side surface of the stacked structure, a portion of the first electrode and a portion of the second electrode.

3. Claims 4-5 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatano et al. (5,998,810) in view of Okazaki (5,990,500) as previously cited.

Hatano et al. teach substantially the entire claimed structure, as applied to claims 1 and 8 above, except a base connect to the first and second electrodes. However, Okazaki teaches a base that has a first and second conductive portions respectively connected to the first and second electrodes; and the base can be a conductive lead frame (see figure 7, column 1, lines 37-48) in order to improve the mechanical strength

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of flip-chip device structure. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to modify the base in Hatano's device as taught by Okazaki for improving the mechanical strength of flip-chip device structure.

4. Claims 7 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hatano et al. (5,998,810) in view of JP 03263878 A as previously cited.

Hatano et al. teach substantially the entire claimed structure, as applied to claims 1 and 8 above, except the second electrode is a multi-layer structure of (Ni/Au/Ti/Al), (ITO/Al) or (ITO/Ag). JP 03263878 A teaches in the abstract the second electrode 7 is made of (ITO/Ag) in order to obtain better reflectivity of light.

Given the above teaching, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to use an electrode comprising (ITO/Ag) in Hanato et al.'s device as taught by JP 03263878 A for the reason shown.

### ***Response to Arguments***

Applicant argues that Hatano does not teach or suggest the second electrode has good reflectivity of light. The argument is not persuasive because the text of Hanato et al. in column 27, lines 41-44 teach the electrode material can be made of Al, Ag, Ni, e.g. It would have been obvious to one having ordinary skill in the art at the time of the invention was made to recognize that the second electrode of Hanato has good reflectivity of light, because as is well known, Ag or Al are the metals that having characteristic of light reflecting and since, the same the electrode material metal as

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claimed (Ag. AI), the function should be the same. Therefore, Hanato et al. teach the second electrode has good reflectivity of light. It has been held when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

Applicant also argues that "Hatano generally relates to a semiconductor laser and to a semiconductor light-emitting element". The argument is not persuasive because a semiconductor light-emitting device includes a laser light and the prior art "a semiconductor light-emitting element" functions as a "a semiconductor light-emitting device". Labels, statements of intended use, or functional language do not structurally distinguish claims over prior art, which can function in the same manner, be labeled in the same manner, or be used in the same manner. See *In re Pearson*, *Ex parte Minks*, and *In re Swinehart*.

The rest of applicant's arguments, addressed to the amended claims are considered in the rejections shown above.

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

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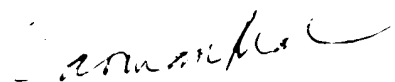
TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Theresa T Doan whose telephone number is (703) 305-2366. The examiner can normally be reached on Monday to Thursday from 8:00AM - 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, WAEL FAHMY can be reached on (703) 308-4918. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

TD  
November 14, 2002.



WAEEL FAHMY  
PATENT EXAMINER